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ABSTRACT

In French immersion programs in Canadian public schools, kindergarten is taught all in French, and the proportion of French instruction gradually decreases thereafter until in seventh grade instruction is only 50 percent French. This study examined the psychological adjustment of a group of first-grade children who had been enrolled in an early French immersion program (EFI) since kindergarten. These students were compared with a group of first-grade children from regular English (RE) classes. Also studied was a group of students in grades 1 through 3 who were transferring into the RE program; these students were compared with those remaining in the EFI program. Students were measured by parent and teacher ratings to assess cognitive functioning, language development, school-related stress, behavioral adjustment, and academic competencies. The results showed very little evidence of differences between the EFI and RE students in average levels of stress, academic competencies, or behavioral adjustment. Only one academic variable favored the RE class. The transferring students displayed exceptionally high levels of school-related stress reactions and behavioral dysfunction. (TM)

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DRAFT

Psychological Factors Associated With the Early Immersion Experience

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Abstract

The study focused on the psychological adjustment of a group of first grade children from a Canadian school system who had been enrolled in an Early French Immersion program since the beginning of senior kindergarten. They were compared with a group of first grade children from regular English classes in terms of parent and teacher ratings of stress, academic competence, and behavioral adjustment. Measures of cognitive and linguistic functioning were also collected. The results revealed few differences between the immersion and regular classroom groups on any of the measures of psychological functioning. Data were also collected for a smaller group of students enrolled in Early French Immersion in grades 1 through 3 who were transferring into the regular program. This group did display exceptionally high levels of stress reactions and behavioural dysfunction.

Psychological Factors Associated With the Early Immersion Experience

It has been 25 years since Canada adopted as its goal the development of a population fluent in both of its official languages, English and French. An important outcome of this objective was the introduction of French immersion programs into the public schools. Several types of these programs have been developed, varying largely in terms of the age at which the child is introduced into immersion. The concern of the present study is with Early French Immersion. These programs provide the child with a totally French instructional environment beginning in senior kindergarten. The French portion drops to 80% in second grade and continues to diminish until it reaches 50% at the grade 7 level. (These grade cut-offs vary somewhat across the system). Approximately 35% of children within the Board of Education in which the present study was conducted were enrolled in the Early French Immersion program.

It should be clear that the French immersion programs in Canada differ in some important respects from the pattern of bilingual education most common in the United States. First, the Canadian programs are primarily enrichment in their orientation rather than compensatory. Second, they tend to draw children from relatively affluent backgrounds.

The theoretical basis for the early immersion experience derives largely from developments in neuropsychology which appear to support the

view that individuals exposed to a second language at any early age will acquire it with greater ease and will more proficient in it than those who acquire it at a later date.

A number of evaluation studies of the Canadian immersion programs have been conducted, and they have yielded generally positive results so far as cognitive and academic criteria are concerned (e.g., Genesee, 1982, 1983; Genesee, Tucker, & Lambert, 1975). The evidence seems to be that a majority of children exposed to the immersion experience do acquire competence in the use of French, suffer few ill effects so far as the development of English language skills is concerned, and do as well in other areas of achievement as those enrolled in the English program. Further, the evidence seems to indicate that the immersion experience does not, in general, have negative consequences for psychosocial development (e.g., Bruck, 1985; Krashen, 1981, 1985; Weber & Tardif, 1988).

In spite of these generally positive results there are some reasons to believe that there may be rather wide individual differences in reactions to the early immersion programs. First, there is anecdotal and clinical evidence from teachers and other professionals suggesting that a minority of children do not benefit from the early immersion experience and may, in fact, suffer some negative psychological consequences from it. Second, the research studies cited above always show variability in the performance of children in the programs. Third, several studies have provided evidence of exceptionally high drop-out

rates from the early immersion programs (Bruck, 1985; Carleton Board of Education, 1989; Trites, 1984).

None of this constitutes direct evidence that the early immersion experience is especially stressful or damaging for children, and the purpose of the present study was to explore somewhat more directly psychological reactions to the Early French Immersion program. The study employed a quasi-experimental design in which first grade children in immersion and regular classrooms were compared in terms of psychological adjustment. This type of design precludes, of course, conclusive statements about programming effects, but it does provide an opportunity to further explore reactions to the immersion experience. Data are also presented on a separate sample of subjects. In this case a group of children transferring out of the Early French Immersion program were compared with those remaining in the program. This sample was used to explore levels of adjustment in those children performing poorly in the program.

Method

Subjects

The first sample was composed of students drawn first grade Early French Immersion (EFI) and regular English (RE) classes of an urban Canadian school system. Data were collected about two thirds of the way through the school year, and most of the immersion students had been enrolled in the program since senior kindergarten. Data were collected from a total of 180 students, including 47 girls and 31 boys from the EFI classes and 58 girls and 44 boys from the regular classes.

The second sample was composed of children transferring out of the EFI classes and moving into RE classes. A total of 20 students from the first, second, and third grades were identified, 12 boys and 8 girls. These were matched for gender and age with 20 students identified as performing adequately within the EFI program.

Measures

Cognitive and linguistic competence. Two measures were employed to assess cognitive functioning. The Goodenough-Harris Drawing Test (GHDT) was used as an index of mental maturity. This is a well established test for which considerable psychometric data are available (Scott, 1981). The second measure was the Test of Language Development - 2 Primary (TOLD-2 Primary). Three scores were derived from this measure: Vocabulary, Grammar, and Total Score. Newcomer and Hammill (1988) have presented data supportive of the reliability and validity of the measure.

School related stress. This construct was assessed by means of the School Related Stress Inventory (SRSI), a rating scale designed for use by parents and teachers. This instrument was developed for this study from previous measures presented by Colton (1985), Omizo, Omizo, and Suzuki (1988), and Elwood (1987). The 12 items of the scale reflect a variety of sources of stress within the classroom environment (e.g., "has difficulties in concentrating on oral instructions", "feels that there are too many things going on at one time in the classroom"). The scale was coded so that high scores on the inventory reflect low stress and low scores reflect high stress. Since the measure was developed

specifically for this study, no reliability or validity data were available.

Behavioral Adjustment. The behavioral adjustment of the child in the classroom was assessed through the parent version of the Child Behavior Checklist (CBCL) as well as the teacher version of the instrument, Child Behavior Checklist - Teacher Report Form (CBCL-TRF). This checklist instrument yields several types of scores. First, a total behavior problem score can be derived which reflects the overall level of adjustment of the child. Second, two broad-band factor scores labeled Externalizing Problems and Internalizing Problems are calculated. Third, a set of narrow-band factor scores are produced which reflect more specific aspects of behavioral adjustment (e.g., aggression, hyperactivity). Considerable information regarding the psychometric properties of this measure has been presented (cf. Achenbach & Edelbrock, 1983, 1986).

Academic competencies. Five scores reflecting the academic competence of the child may also be derived from the CBCL-TRF: Adaptive Functioning, Referral for Special Education, Repeating Grade, Academic Skills, and Academic Behavior.

Procedure

Parents of children enrolled in both RE and EFI classes of a large urban school board were asked by letter to agree to their child's participation in a study of academic and behavioral adjustment. Parents of 180 students agreed to their child's participation.

The GHDT and the TOLD-2 Primary were administered by one of the researchers to participating students in the school setting. Copies of the SRSI and the CBCL were mailed to parents who were asked to return them to the classroom teacher. All 180 parents returned the material.

In order to limit the amount of time requested of the classroom teachers, a smaller group of subjects was identified. This included the 33 students receiving the highest parental stress ratings (13 from EFI and 44 from RE) and 36 with the lowest parental stress ratings (12 from EFI and 24 from RE). Classroom teachers provided SRSI and CBCL-TRF ratings for these students.

Board personnel were asked to identify all students planning to transfer out of the grades 1, 2, and 3 EFI program over a three month period. A total of 20 students were identified, and all of their parents agreed to their participation in the study. A group of 20 students not designated as potential transfers were selected as a control. The two groups were matched for gender and age. The TOLD-2 Primary was administered to these students and SRSI and CBCL forms were completed by parents and teachers.

Results

Psychometric Analyses

A number of analyses were conducted in an effort to assess the reliability and validity of the SRSI. Significant coefficient alpha values were obtained for both the parent and teacher versions; these ranged from 0.82 to 0.92 for boys and girls. Evidence for convergent validity was obtained through significant correlations between the

parent and teacher versions of the instrument for both boys, $r\ (35) = 0.57$, $p < 0.001$, and girls, $r\ (29) = 0.77$, $p < 0.001$.

Analyzing for Program Effects

Cognitive variables. A nonsignificant main effect for programming was obtained with the index of mental maturity, the Goodenough Harris Drawing Test.

Both boys and girls in the RE classes displayed higher scores on the Vocabulary, Grammar, and Total Language subsets of the TOLD-2 Primary test, though the differences were statistically significant only for the Grammar subtest with boys. Boys in the RE group obtained a higher score ($M = 48.32$) than boys in the EFI group ($M = 29.34$), $F\ (1,35) = 5.23$, $p < 0.01$.

Stress ratings. Table 1 presents data for the parent ratings of

Insert Table 1 about here

school related stress. Both the program and gender variables yielded nonsignificant effects.

Table 2 presents the same comparisons for the teacher-based stress

Insert Table 2 about here

ratings. It can be seen from the table that girls in the RE classes are obtaining lower stress scores than children in the other three conditions (high SRSI scores denote low stress). However, the main effects for gender and program were not significant, nor was the interaction of the two.

Academic Competence. Five indices of academic competence were available from the CBCL-TRF: Adaptive Functioning, Referral for Special Education, Repeating Grade, Academic Skills, and Academic Behavior. Table 3 presents the program and gender comparisons for those indices.

Insert Table 3 about here

Tests of interactions of the program and gender variables yielded nonsignificant results for each of the five dependent variables. However, the main effect of gender on the Academic Behavior measure was significant and the main effect for program approached significance for the same variable. Results revealed higher Academic Behavior scores for girls ($M = 4.32$) than boys ($M = 3.86$), $F(1,59) = 4.90$, $p < 0.05$. Academic Behavior scores were also higher for children in RE classrooms ($M = 4.23$) than immersion classrooms ($M = 3.74$), $F(1,59) = 3.08$, $p < 0.06$).

Behavior ratings. Three types of scores may be derived from the parent and teacher forms of the Child Behavior Checklist: (a) a total score reflecting the overall behavioral adjustment of the child; (b) two broad-band scores reflecting internalizing and externalizing problems; and (c) a set of narrow-band scores reflecting more specific behavioral domains.

Table 4 contains the gender and program comparisons for total Child

Insert Table 4 about here

Behavior Checklist scores from the parent (Part A) and teacher (Part B)

ratings. Analyses of variance for both sets of data revealed no significant main effects nor interactions.

Separate scoring protocols are used for boys and girls in calculating the broad-band and narrow-band scores. Hence, two sets of MANOVAs were calculated, each based on the set of narrow and broad-band factors yielded for that particular gender. The results will not be presented in detail here, but we will note that both analyses yielded nonsignificant values for the program and gender main effects and the interaction of the two.[1]

Comparisons of Transfer and Control

Separate analyses were conducted with a group of 20 students who were transferring out of the EFI program. These 20 were drawn from first, second, and third grade, and they were matched for gender and age with 20 students remaining in the program.

As Table 5 indicates, there were significant differences between the

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Insert Table 5 about here

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transfer and control groups for the Language, Grammar, and Total scores of the TOLD-2 Primary measure. These differences favored the control subjects.

Analyses of the parent and teacher ratings of stress and total behavior problem scores yielded no main effects for gender and no gender by transfer/control interaction. Hence, data were pooled for boys and

girls. Table 6 presents comparisons of the transfers and controls for

Insert Table 6 about here

the stress and total behavior ratings. It can be seen that the transfer students are demonstrating significantly higher stress and behavioral problem levels where assessed with both the parent and teacher instruments.

Table 7 presents a comparison of the two groups for the four

Insert Table 7 about here

academic competence ratings from the CBCL-TRF. They indicate that the transfer students were rated significantly below the controls for the Special Education Referral, Academic Skills and Academic Behavior scales.

We also compared transfers and controls on the two broad-band factors from the CBCL. The comparisons based on data from the parent ratings yielded nonsignificant differences between the two groups. However, significant effects were found for data from the teacher ratings. Transfer girls displayed higher externalizing scores ($M = 19.62$) than control girls ($M = 2.30$), $F(1,11) = 5.46$, $p < 0.05$. The significant effect was obtained for boys in the case of the internalizing score, with transfer boys displaying significantly higher scores ($M = 7.96$) than control boys ($M = 3.21$), $F(1,22) = 5.22$, $p < 0.05$.

Comparisons of transfer and control girls with the 9 narrow-band scores derived from the parent ratings yielded non-significant differences. However, the comparisons for boys indicated differences for the Hyperactive and Uncommunicative scales. Transfer boys showed significantly higher Hyperactive scores ($M = 7.11$) than the control boys ($M = 2.30$), $F(1,22) = 13.11$, $p < 0.01$. Similarly, transfer boys showed higher Uncommunicative scores ($M = 3.23$) than the control boys ($M = 1.43$), $F(1,22) = 4.96$, $p < 0.05$.

Data from the teacher version of the CBCL also yielded information about narrow-band factors. Transfer boys yielded a significantly higher Inattention score ($M = 3.76$) than control boys ($M = 0.80$), $F(1,22) = 6.32$, $p < 0.05$. Similarly, transfer girls yielded a higher score for Inattention ($M = 14.22$) than control girls ($M = 2.10$), $F(1,11) = 6.68$), $p < 0.05$. Transfer boys also yielded higher Social Withdrawal scores ($M = 3.79$) than control boys ($M = 0.82$), $F(1,22) = 6.33$, $p < 0.05$. Finally, transfer girls displayed higher Depression scores ($M = 4.27$) than control girls ($M = 0.76$), $F(1,11) = 7.89$, $p < 0.05$. (The numbers of subjects involved in these analyses were too small to perform multivariate analyses, and interpretation of these significant results must be made with some caution.)

Discussion

The results of the study presented very little evidence of differences between EFI and RE students in average levels of stress, academic competencies, or behavioral adjustment. The only significant difference was observed for the Academic Behavior variable of the CBCL-

TRF, a difference favoring the RE group. However, one significant difference within a large set of comparisons must be interpreted with some caution.

The failure to find negative psychosocial effects for the immersion group as compared with the RE classes is generally consistent with other researchers exploring the effects of the immersion experience (e.g., Bruck, 1985; Krashen, 1985; Weber & Tardiff, 1988). In general, children in immersion classes seem to demonstrate levels of stress and behavioral adjustment similar to that of students in regular classrooms.

There are, on the other hand, certain methodological limitations of the study that must be kept in mind in evaluating the conclusion. The first relates to the use of a quasi-experimental design. We were not dealing with a random assignment of subjects to the EFI and RE conditions, and it is likely that some selectivity operates with respect to the type of child enrolled in the two types of classes and perhaps even the types of teachers in the two groups. It is not possible to determine the exact effect of this potential confound, but it must be acknowledged. A second limitation relates to the use of the extreme groups with the teacher-based measures. This was done to limit the amount of time requested of teachers, but it did have the effect of limiting the range of scores utilized. A third limitation concerns the SRSI. This was adapted from existing instruments, and we were able to present some data in support of its reliability and validity. Still, it must be acknowledged that only preliminary information about its psychometric properties are available.

The results of the study seemed to indicate that most children in the EFI classes were not exhibiting exceptionally high levels of stress or behavioral disorder. This does not mean, though, that all children were doing well in those classes. There was considerable variance associated with the stress, academic competence, and behavioral measures, and it is clear that some children were showing adjustment problems. The presence of this variability is consistent with earlier results (Bruck, 1985; Carleton Board of Education, 1989; Trites, 1984).

We were able to explore some of the characteristics of children not adapting well to the immersion experience with our investigation of children transferring out of the EFI classes. Those analyses indicated that these children were exhibiting exceptionally high levels of school related stress and poor behavioral adjustment. Whether these negative effects are due directly to the immersion experience is open to question; our design was such as to provide no direct answer to that question. The results do, however, confirm the reports of some teachers and psychologists that a minority of children in the immersion program is experiencing significant difficulty.

The results of the study have some obvious implications for counseling and intervention services. There is a need for continued vigilance on the part of parents, teachers, and educational professionals for signs of stress and behavioral distress in children. The earlier we intervene in these cases the more likely we are to enable the child to overcome their difficulties and realize their full academic and personal potentialities.

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Footnotes

1. A complete report of the analyses is available from the first author.

Table 1

Means and Standard Deviations for the Parent-Based Measure of School Related Stress by Gender and Program

	Type of Program		
	RE	EFI	Total
Female	18.16 (5.93)	18.22 (5.56)	18.20 (5.72)
Male	16.82 (5.90)	16.67 (6.82)	16.73 (6.23)
Total	17.56 (5.91)	17.61 (6.22)	17.63 (5.96)

Note. RE = Regular English program; EFI = Early French Immersion Program. Low SRSI scores indicate high stress and high scores low stress.

Table 2

Means and Standard Deviations for the Teacher-Based Measure of School Related Stress by Gender and Program

	Type of Program		
	RE	EFI	Total
Female	15.62 (9.76)	12.63 (8.50)	14.58 (9.23)
Male	12.22 (8.96)	12.09 (8.23)	12.03 (8.62)
Total	13.61 (9.42)	12.32 (8.17)	13.17 (8.92)

Note. RP = Regular English Program; EFI = Early French Immersion Program. Low SRI scores denote high stress and high scores low stress.

Table 3

Mean Academic Competence Scores from the CBCL-TRF by Gender and Type of Program

	Type of Program			
	RE		EFI	
	Male	Female	Male	Female
Adaptive Functioning	7.07 (1.64)	7.56 (2.35)	6.65 (1.09)	6.53 (1.98)
Special Education	0.29 (0.46)	0.26 (0.45)	0.15 (0.38)	0.50 (0.52)
Repeat Grade	0.04 (0.20)	0.11 (0.32)	0.08 (0.28)	0.08 (0.29)
Academic Skills	3.13 (0.76)	3.18 (1.00)	2.99 (0.65)	2.70 (0.75)
Academic Behavior	3.94 (3.72)	4.63 (1.23)	3.66 (0.69)	3.83 (1.43)

Note. RE = Regular English program; EFI = Early French Immersion program.

Table 4

Total Child Behavior Checklist Scores for the Parent (Part A) and Teacher (Part B) Data by Gender and Type of Program

Part A: Parent Data

	Type of Program			
	RE		EFI	
	Male	Female	Male	Female
Mean	24.62	26.11	25.97	24.76
SD	14.44	20.22	16.52	16.60

Part B: Teacher Data

	Type of Program			
	RE		EFI	
	Male	Female	Male	Female
Mean	22.23	20.22	26.31	31.58
SD	24.72	24.11	25.72	24.86

Note. RE = Regular English program; EFI = Early French Immersion program.

Table 5

Means and Standard Deviations for the TOLD-2 Primary Measure for Transfer and Control Groups

	Transfers	Controls	p
Vocabulary			
Mean	40.06	57.00	< 0.05
SD	20.02	27.23	
Grammar			
Mean	35.12	52.40	< 0.05
SD	23.32	27.28	
Total Score			
Mean	93.12	103.00	< 0.01
SD	10.05	13.22	

Table 6

Means and Standard Deviations for the Parent and Teacher-Based Measures of School-Related Stress and Total Behavior Problem Scores for Transfer and Control Groups

	Transfers	Controls	p
Parent SRSI Scores			
Mean	7.92	17.86	< 0.001
SD	7.32	6.21	
Teacher SRSI Scores			
Mean	1.82	19.63	< 0.001
SD	11.03	5.32	
Parent Total CBCL Scores			
Mean	30.52	19.03	< 0.05
SD	21.06	10.32	
Teacher Total CBCL Scores			
Mean	35.62	12.41	< 0.01
SD	30.91	14.22	

Note. SRSI = School Related Stress Inventory; CBCL = Child Behavior Checklist. High SRSI scores indicate low stress and high scores indicate low stress.

Table 7

Means and Standard Deviations for the Academic Competence Ratings of the CBCL-TRF Measure for the Transfer and Control Groups

	Transfers	Controls	p
Special Education Refferal			
Mean	0.82	0.21	< 0.001
SD	0.46	0.41	
Repeat Grade			
Mean	0.11	0.13	NS
SD	0.38	0.30	
Academic Skills			
Mean	2.15	3.36	< 0.001
SD	0.63	0.71	
Academic Behavior			
Mean	3.12	4.49	< 0.01
SD	1.23	1.17	

Note. CBCL-TRF = Child Behavior Checklist - Teacher Report Form.